

watershed. They found high levels of loading for both total nitrogen and total phosphorus. Holman (1993) found that water column data for Currituck Sound in general was characterized by high values of pH, total N, total P, dissolved oxygen and fecal coliform. Also, "some of the highest values for suspended solids for the entire Albemarle-Pamlico estuarine system study area have been recorded in the Currituck Sound".

NORTH LANDING RIVER SEDIMENTS

Sediment Samples

Thirty six sites were sampled in the North Landing River (Fig. 4) producing 55 sediment samples for analysis. All samples were push cores obtained by free divers; the cores were obtained with 9 cm diameter clear polybuterate pipe that ranged from 0.5 to 1 meter in length. One 6 meter vibracore (CTK-V1) was obtained along profile P6 (Fig. 4) in order to characterize the undisturbed sediment column into which the Intracoastal Waterway has been dug. Figure 5 is a geologic log of vibracore CTK-V1. Sediment subsamples from all cores were analyzed according to standard sedimentological procedures. Sediment data were statistically analyzed and synthesized and represent the data base for the following discussion and conclusions. All samples and associated sedimentological data are presented in Appendix I. Detailed information on the analytical and statistical procedures are not included in this report; however, all procedures are identical to those utilized for both the Neuse River and Albemarle Sound studies and are described in detail in Riggs et al. (1991, 1993), respectively.

Table 1 summarizes the main sediment types and presents their locations within the estuarine environment. The North Landing River is subdivided into the following morphological components:

1. Two different shoreline types are each composed of several parts and very different sediments.
 - a. The western shore is dominated by an eroding modern marsh peat with an adjacent eroded Holocene peat platform.
 - b. The eastern shore is dominated by an eroding Pleistocene sediment bank with an adjacent Pleistocene clay and sandy clay platform.
2. The estuarine basin is a shallow, saucer-shaped depositional basin.
 - a. The lip of the saucer is cut into and underlain by the eroded peat platform on the western side and eroded Pleistocene clay platform on the eastern side.
 - b. The main portion of the saucer forms the central basin which is filled with a thick sequence of slightly sandy, organic-rich mud.
 - c. Superimposed upon the slightly sloping eroded platforms and outer portion of the basin are the shallow shoal structures produced by the periodic disposal of dredged material.